Three Level Stacked Reflective Display

Abstract of the Invention

A structure and fabrication technology for a reflective, ambient light, low cost display is described incorporating a plurality of cells laid out side by side and stacked as many as three levels on top of each other. Each stack of three cells being driven by an array of TFT's positioned on the bottom layer. Each cell comprises a light transmitting front window, three levels of individual cells RGB (Red, Green, and Blue) stacked on top of each other, each level having its own individual electrode, each electrode being connected by vertical conducting via holes running through each transparent dielectric spacert and being connected to a individual TFT. The bottom panel having a reflective surface so as to provide maximum reflectivity of the ambient light. Placed under the reflective surface is an array of TFT's which provide the electrical impulses necessary to set each individual potential in each vertically stacked cell with respect to ground potential. A transmissive liquid crystal display can readily be fabricated by deleting the reflective surface. Also described are stuctures and assembly methods suitable for fabricating a Guest-Host LCD, a Cholesteric LCD, a Holographic Polymer Dispersed LCD and an Organic Light Emitting Diode (OLED) display.